

Amendments to the Claims

Please add new Claims 49-72. The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

1. (Original) A method for setting up a call within a wireless communication system, wherein the wireless communication system is deployed to provide call services to mobile stations (MS) operating in a private network, the method comprising the steps of:
receiving a request at a mobile station to originate a special call services (SCS) call, the SCS call specifying a private service that is specially supported by the private network;
coding a service type field in a request message to specify the SCS call; and
sending the request message from the mobile station to base station equipment for call setup within the private network.
2. (Original) A method as in claim 1 wherein the wireless communication system operates according to certain functional layers, including a radio resource (RR) functional layer (RR), a mobility management (MM) functional layer, and a connection management (CM) functional layer, with at least the radio resource functional layer being normally assumed to be a transport mechanism for the mobility management and connection management layer functions.
3. (Original) A method as in claim 2 wherein the wireless communication system is a Global System for Mobile (GSM) system.
4. (Original) A method as in claim 3 wherein the service type field in the SCS request message is defined using reserved GSM service type codes.
5. (Original) A method as in claim 2 wherein the service request message is coded at a mobility management (MM) layer.

6. (Original) A method as in claim 2 wherein the radio resource (RR) functional layer additionally performs the steps of:
 - detecting a newly added special call services (SCS) causes request; and
 - granting physical resources to service a request depending upon the SCS cause type and a state of other call types already in process.
7. (Original) A method as in claim 6 wherein the step of granting physical resources additionally comprises the steps of:
 - dropping a normal call-in-process in order to accommodate the SCS call if there are no other free physical resources left; and
 - prioritizing SCS calls in progress.
8. (Original) A method as in claim 6 wherein the step of granting physical resources additionally comprises the step of:
 - allocating radio resources to the call that are reserved in advance for servicing SCS calls.
9. (Original) A method as in claim 1 wherein the private service specific call is a private emergency call.
10. (Original) A method as in claim 1 wherein the request message is a channel request message.
11. (Original) A method as in claim 1 wherein the request message is a service request message.
12. (Original) A method as in claim 1 additionally comprising the step of:
 - maintaining an SCS cause table that maps dialed numbers to SCS causes; and
 - upon receiving a request at the mobile station to originate a call, looking up a dialed number in the SCS cause table to determine if the call request can be request as an SCS call.

13. (Original) In a wireless communication system deployed to provide call services to mobile stations (MS) operating in a private network, an apparatus for setting up a call comprising:

- a user interface, for receiving a request at a mobile station to originate a special call services (SCS) call, the SCS call specifying a private service that is specially supported by the private network;
- a message coder, for coding a service type field in a request message to specify the SCS call; and
- a transmitter, for sending the request message from the mobile station to base station equipment for call setup within the private network.

14. (Original) An apparatus as in claim 13 wherein the wireless communication system operates according to certain functional layers, including a radio resource (RR) functional layer (RR), a mobility management (MM) functional layer, and a connection management (CM) functional layer, with at least the radio resource functional layer being normally assumed to be a transport mechanism for the mobility management and connection management layer functions.

15. (Original) An apparatus as in claim 14 wherein the wireless communication system is a Global System for Mobile (GSM) system.

16. (Original) An apparatus as in claim 15 wherein the service type field in the SCS request message is defined using reserved GSM service type codes.

17. (Original) An apparatus as in claim 14 wherein the service request message is coded at a mobility management (MM) layer.

18. (Original) An apparatus as in claim 14 wherein the radio resource (RR) functional layer additionally comprises:

- a receiver, for receiving a newly added special call services (SCS) causes request; and
- a physical resource manager, that service a request depending upon the SCS cause

type and a state of other call types already in process.

19. (Original) An apparatus as in claim 18 wherein the physical resource manager additionally drops a normal call-in-process in order to accommodate the SCS call if there are no other free physical resources left.

20. (Original) An apparatus as in claim 18 wherein the physical resource manager additionally allocates radio resources to the call that are reserved in advance for servicing SCS calls.

21. (Original) An apparatus as in claim 13 wherein the private service specific call is a private emergency call.

22. (Original) An apparatus as in claim 13 wherein the request message is a channel request message.

23. (Original) An apparatus as in claim 13 wherein the request message is a service request message.

24. (Original) An apparatus as in claim 13 additionally comprising:
an SCS cause table that maps dialed numbers to SCS causes, such table being used, upon receiving a request at the mobile station to originate a call, for looking up a dialed number in the SCS cause table to determine if the call request can be request as an SCS call.

25. (Original) A computer program product for setting up a call within a wireless communication system, wherein the wireless communication system is deployed to provide call services to mobile stations (MS) operating in a private network, the computer program product comprising a computer usable medium having computer readable code thereon, comprising computer code which:

receives a request at a mobile station to originate a special call services (SCS) call,

the SCS call specifying a private service that is specially supported by the private network;
codes a service type field in a request message to specify the SCS call; and
sends the request message from the mobile station to base station equipment for
call setup within the private network.

26. (Original) A computer program product as in claim 25 wherein the wireless communication system operates according to certain functional layers, including a radio resource (RR) functional layer (RR), a mobility management (MM) functional layer, and a connection management (CM) functional layer, with at least the radio resource functional layer being normally assumed to be a transport mechanism for the mobility management and connection management layer functions.

27. (Original) A computer program product as in claim 25 wherein the wireless communication system is a Global System for Mobile (GSM) system.

28. (Original) A computer program product as in claim 27 wherein the service type field in the SCS request message is defined using reserved GSM service type codes.

29. (Original) A computer program product as in claim 26 wherein the service request message is coded at a mobility management (MM) layer.

30. (Original) A computer program product as in claim 26 wherein the computer code contains a radio resource (RR) functional layer which:

detects a newly added special call service (SCS) causes request; and
grants physical resources to service a request depending upon the SCS cause type
and a state of other call types already in process.

31. (Original) A computer program product as in claim 30 wherein the computer code additionally:

drops a normal call-in-process in order to accommodate the SCS call if there are no other

free physical resources left; and
prioritizes SCS calls in progress.

32. (Original) A computer program product as in claim 30 wherein the computer code additionally:

allocates radio resources to the call that are reserved in advance for servicing SCS calls.

33. (Original) A computer program product as in claim 25 wherein the private service specific call is a private emergency call.

34. (Original) A computer program product as in claim 25 wherein the request message is a channel request message.

35. (Original) A computer program product as in claim 25 wherein the request message is a service request message.

36. (Original) A computer program product as in claim 25 wherein the computer code additionally:

maintains an SCS cause table that maps dialed numbers to SCS causes; and
upon receiving a request at the mobile station to originate a call, looks up a dialed number in the SCS cause table to determine if the call request can be request as an SCS call.

37. (Original) In a wireless communication system deployed to provide call services to mobile stations (MS) operating in a private network, an apparatus for setting up a call comprising:

means for receiving a request at a mobile station to originate a special call services (SCS) call, the SCS call specifying a private service that is specially supported by the private network;
means for coding a service type field in a request message to specify the SCS call; and
means for sending the request message from the mobile station to base station equipment for call setup within the private network.

38. (Original) An apparatus as in claim 37 wherein the wireless communication system operates according to certain functional layers, including a radio resource (RR) functional layer (RR), a mobility management (MM) functional layer, and a connection management (CM) functional layer, with at least the radio resource functional layer being normally assumed to be a transport mechanism for the mobility management and connection management layer functions.

39. (Original) An apparatus as in claim 38 wherein the wireless communication system is a Global System for Mobile (GSM) system.

40. (Original) An apparatus as in claim 39 wherein the service type field in the SCS request message is defined using reserved GSM service type codes.

41. (Original) An apparatus as in claim 38 wherein the service request message is coded at a mobility management (MM) layer.

42. (Original) An apparatus as in claim 38 wherein the radio resource (RR) functional layer additionally comprises:

means for detecting a newly added special call services (SCS) causes request; and

means for granting physical resources to service a request depending upon the SCS cause type and a state of other call types already in process.

43. (Original) An apparatus as in claim 42 wherein the means for granting physical resources additionally comprises:

means for dropping a normal call-in-process in order to accommodate the SCS call if there are no other free physical resources left; and

means for prioritizing SCS calls in progress.

44. (Original) An apparatus as in claim 42 wherein the means for granting physical resources additionally comprises:

means for allocating radio resources to the call that are reserved in advance for servicing

SCS calls.

45. (Original) An apparatus as in claim 37 wherein the private service specific call is a private emergency call.

46. (Original) An apparatus as in claim 37 wherein the request message is a channel request message.

47. (Original) An apparatus as in claim 37 wherein the request message is a service request message.

48. (Original) An apparatus as in claim 37 additionally comprising:
means for maintaining an SCS cause table that maps dialed numbers to SCS causes; and
means for, upon receiving a request at the mobile station to originate a call, looking up a dialed number in the SCS cause table to determine if the call request can be request as an SCS call.

49. (New) A method for setting up a call within a wireless communication system, wherein the wireless communication system is deployed to provide call services to mobile stations operating in a private network, the method comprising the steps of:

receiving a request message for a new special call services (SCS) call, wherein the request message specifies a private service that is specially supported by the private network; and
granting resources to service the new SCS call depending upon the private service specified in the request message and a state of other existing calls in the private network.

50. (New) A method as in claim 49 further comprising the step of:

dropping a normal call-in-process in the private network in order to accommodate the new SCS call.

51. (New) A method as in claim 49 further comprising the steps of:

determining if an existing call in the private network can be dropped; and
if so, dropping the existing call to accommodate the new SCS call.

52. (New) A method as in claim 49 wherein the request message specifies a priority of the new SCS call.

53. (New) A method as in claim 52 further comprising the steps of:
determining if the new SCS call's priority is higher in priority than a priority associated with an existing call in the private network; and
if so, dropping the existing call to accommodate the new SCS call.

54. (New) A method as in claim 49 further comprising the step of:
allocating resources in the private network to the new SCS call.

55. (New) An apparatus for setting up a call within a wireless communication system, wherein the wireless communication system is deployed to provide call services to mobile stations (MS) operating in a private network, the apparatus comprising:
a base transceiver station (BTS) configured to receive a request message for a new special call services (SCS) call, wherein the request message specifies a private service that is specially supported by the private network; and
a base station controller (BSC) configured to grant resources to service the new SCS call depending upon the private service specified in the request message and a state of other calls existing in the private network.

56. (New) An apparatus as in claim 55 wherein the BSC is further configured to drop a normal call-in-process in the private network in order to accommodate the new SCS call.

57. (New) An apparatus as in claim 55 wherein the BSC is further configured to determine if an existing call in the private network can be dropped and if so, drop the existing call to accommodate the new SCS call.

58. (New) An apparatus as in claim 55 wherein the request message specifies a priority of the new SCS call.

59. (New) An apparatus as in claim 58 wherein the BSC is further configured to determine if the priority associated with the new SCS call is higher in priority than a priority associated with an existing call in the private network and if so, drop the existing call to accommodate the new SCS call.

60. (New) An apparatus as in claim 55 wherein the BSC is further configured to allocate resources in the private network to the new SCS call.

61. (New) An apparatus for setting up a call within a wireless communication system, wherein the wireless communication system is deployed to provide call services to mobile stations (MS) operating in a private network, the apparatus comprising:

means for receiving a request message for a new special call services (SCS) call, wherein the request message specifies a private service that is specially supported by the private network; and

means for granting resources to service the new SCS call depending upon the private service specified in the request message and a state of other calls in the private network.

62. (New) An apparatus as in claim 61 further comprising:

means for dropping a call-in-process in the private network in order to accommodate the new SCS call.

63. (New) An apparatus as in claim 61 further comprising:

means for determining if an existing call in the private network can be dropped; and
means for dropping the existing call to accommodate the new SCS call, if the existing call can be dropped.

64. (New) An apparatus as in claim 61 wherein the request message specifies a priority of the new SCS call.

65. (New) An apparatus as in claim 64 further comprising:
means for determining if the new SCS call's priority is higher in priority than a priority associated with an existing call in the private network; and
means for dropping the existing call if the new SCS call's priority is higher in priority than the existing call's priority.

66. (New) An apparatus as in claim 61 further comprising:
means for allocating resources in the private network to accommodate the new SCS call.

67. (New) A computer program product for setting up a call within a wireless communication system, wherein the wireless communication system is deployed to provide call services to mobile stations (MS) operating in a private network, the computer program product comprising a computer usable medium having computer readable code thereon, comprising computer code which:

receives a request message for a new special call services (SCS) call, wherein the request message specifies a private service that is specially supported by the private network; and
grants resources to service the new SCS call depending upon the private service specified in the request message and a state of existing calls in the private network.

68. (New) A computer program product as in claim 67 wherein the computer code additionally:

drops a normal call-in-process in the private network in order to accommodate the new SCS call.

69. (New) A computer program product as in claim 67 wherein the computer code additionally:

determines if an existing call in the private network can be dropped; and

if so, drops the existing call to accommodate the new SCS call.

70. (New) A computer program product as in claim 67 wherein the request message specifies a priority of the new SCS call.

71. (New) A computer program product as in claim 70 wherein the computer code additionally:

determines if the priority associated with the new SCS call is higher in priority than a priority associated with an existing call in the private network; and

if so, drops the existing call to accommodate the new SCS call.

72. (New) A computer program product as in claim 67 wherein the computer code additionally:

allocates resources in the private network to accommodate the new SCS call.